

Introduction to Trigonometry

The **three primary trig ratios** are known as **sine, cosine, and tangent**.

These trig ratios can **ONLY** be used when working with a **RIGHT TRIANGLE**.

Label the sides:

opposite

hypotenuse

adjacent

The Three Primary Trig Ratios

$\sin \theta = \frac{\text{Opposite}}{\text{Hypotenuse}}$
 $\cos \theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$
 $\tan \theta = \frac{\text{Opposite}}{\text{Adjacent}}$

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Example 1) State the primary trig ratios.

A)

B)

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$\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$

$\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$

$\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$

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Example 1) State the primary trig ratios.

A)

B)

$\sin \theta = \frac{12}{13}$
 $\cos \theta = \frac{5}{13}$
 $\tan \theta = \frac{12}{5}$

$\sin \theta = \frac{6}{10}$
 $\cos \theta = \frac{8}{10}$
 $\tan \theta = \frac{3}{4}$

$\theta = \sin^{-1}(\frac{12}{13})$
 $\theta = \cos^{-1}(\frac{5}{13})$
 $\theta = \tan^{-1}(\frac{12}{5})$

$\theta = \sin^{-1}(0.4615)$
 $\theta = \cos^{-1}(0.3846)$
 $\theta = \tan^{-1}(2.4)$

$\theta = 27.7^\circ$
 $\theta = 67^\circ$
 $\theta = 67^\circ$

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